# ATTACHMENT 3

PAPADIMOS GROUP

300 MONTGOMERY STREET, SUITE 908
SAN FRANCISCO, CALIFORNIA 94104
TEL +1 (415) 986-9100
www.papadimosgroup.com

14 October 2014

Heather M. Minner
Shute, Mihaly & Weinberger
396 Hayes Street
San Francisco, CA 94102

SUBJECT: Samaritan Court Medical Office – San Jose, CA
Acoustic Review of Initial Study/Negative Declaration

Dear Heather:

As requested, we have reviewed the noise section of the Initial Study/ Negative Declaration prepared for this project (dated September 2014, Chapter XII).

In summary, this initial study is incomplete and recommends limited additional analysis as a mitigation measure after the fact. Project- specific assessment for construction noise and vibration should be undertaken that takes into account proposed construction methods, phasing, etc. and be made part of this initial study. A similar noise assessment for proposed building mechanical systems should also be part of this initial study to develop specific mitigation based on preliminary plans and equipment selections.

Our review has focused on the noise section of the above referenced document (Chapter XII, pages 43 to 48) and our key comments are as follows:

1. Under SETTING starting on Page 43:
    a. The initial study does not include an ambient noise survey to characterize existing conditions both for the project site and surrounding residential uses. Such survey is needed to demonstrate compliance with City of San Jose General Plan Policy EC-1.2 in terms of allowable noise increases due to the project and should include attended and unattended noise measurements. The noise data gathered by such survey should then be used to determine the presence of significant project noise impacts and develop appropriate mitigation measures. For definitions of common acoustical terms refer to page 4.
    b. Applicable standards and policies should include CalGreen® requirements for the new facility and any relevant parts of the City of San Jose Noise Ordinance (Chapter 10.16 of the municipal code) for assessing impacts to existing residential areas.

c. Construction noise impacts for this type of project, and given its adjacency to residential uses, should consider more detailed mitigation. This is often tied to noise limits at the property line and beyond in addition to limiting construction hours and other administrative measures.

d. For assessing construction noise appropriate limits should be used to carry out proper noise analysis and develop appropriate mitigation to protect existing residences adjacent to the project site during the various phases of construction. Specific analysis should establish such noise limits but noise levels in the range of 80 to 90 dBA are typically used to protect residential uses.

2. Under FINDINGS starting on page 46:

a. The noise exposure for the site and surrounding residential areas has not been documented through noise measurements. Such information should be part of a proper noise study that is then used to carry out proper noise analysis for both short-term (i.e. facility construction) and long- term (i.e. operating facility) impacts associated with this project and develop appropriate mitigation.

b. The initial study does not address noise from mechanical equipment used to ventilate the building or any emergency equipment such as diesel generators. Furthermore, there is no information about types and locations of such equipment and on that basis the finding that this equipment will not result in a significant impact cannot be supported. A proper study needs to include specific mitigation that takes into account equipment location, and specific noise output based on manufacturer sound data and content of noise. For example, rooftop equipment may warrant proper selection, use of sound barriers with a height dependent on proximity to property line, height of the noise source, etc.

c. Some mechanical equipment generate noise that stands out over the ambient in terms of quality and not loudness (i.e. whining, grinding, hissing, etc. referred to as equipment with tonal qualities) and provisions to address noise qualities at the property line and beyond are recommended and included in the noise analysis.

d. Similarly, emergency generators should be preferably located remote from residential property lines and only procured with proper acoustic enclosures as they tend to be very loud even though they typically only run for short time periods for periodic exercising.

e. While the City Zoning Ordinance sets a limit of 55 dBA at residential property boundaries for continuous noise associated with project mechanical equipment, this may be too big of an increase for existing residences to the south. It would be preferable to tie project noise emissions to existing ambient conditions and if such levels are currently below 55 dBA they are only allowed to increase by 3 to 5 dB over existing and this is consistent with CEQA.

f. The initial study should also assess loading dock noise, noise from cars parking, etc. in terms of potentially impacting nearby residences and need for mitigation.

g. Construction noise for such project will vary during different phases and given the proximity to residential properties warrants proper noise analysis and developing appropriate mitigation beyond operating hours and other administrative controls referenced in the initial study. It would be prudent to set an upper noise limit at residential boundaries and determine ahead of time what types of activities will result in high noise levels and propose mitigation options.

h. The project includes substantial excavating and earth moving for the parking garage and possibly the office building and provides no specifics on the range of noise levels that may result from such activities as well as other phases of construction. Similarly, foundation work should avoid use of equipment that tends to generate substantial vibration in addition to noise and at a minimum should exclude use of pile driving without further analysis.

Without these additional studies and mitigation measures the project could have a significant noise impact on surrounding residential areas.

I trust you will find this information useful but please let me know if you have any questions or require further assistance.

Sincerely,
THE PAPADIMOS GROUP, INC.

Chris Papadimos
Principal

Encl. Definitions of Common Acoustical Terms (1 page)

## DEFINITIONS OF COMMON ACOUSTICAL TERMS

**Decibel, dB** – A unit describing the amplitude of sound, defined as 20 times of the logarithm of the ratio of the sound pressure measured to the reference pressure (20 µPa).

**A-weighted Sound Level, dBA** – The sound pressure measured using the A-weighting filter network that de-emphasizes the very low and very high frequency components of the sound spectrum in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.

**Ambient Noise –** The sound level in a given environment usually comprised of many sources in many directions near and far with no particular sound dominant. It is of the defined as $L_{99}$ or the noise level exceeded 99% of the time.

**Background Noise** - The total noise from all sources other than the source of interest. It is often defined as $L_{90}$ or the noise level exceeded 90% of the time.

**Community Noise Equivalent Level, CNEL** – The average A-weighted noise level in a 24-hour day, obtained after adding 5 dB to evening hours (7:00 pm to 10:00 pm) and 10 dB to sound levels measured in the night (between 10:00 pm and 7:00 am).

**Day/Night Noise Level, $L_{dn}$ (or DNL)** – The average, 24-hour A-weighted noise level, obtained after adding 10 dB to levels measured at night (10:00 pm to 7:00 am).

**Integrated or Equivalent Noise Level, $L_{eq}$** – The energy average A-weighted noise level during the measurement period.

**Sound level meter** - An instrument that measures sound in dB. Various features are incorporated into such instrument including frequency bands, integration of sound over time and display of average, minimum, and maximum levels.

**Sound pressure level** - the ratio, expressed in decibels, of the mean-square sound pressure level to a reference mean-square sound pressure level that by convention has been selected to approximate the threshold of hearing (0.0002 µbar)

**Frequency** – The number of times per second that the oscillation of a wave of sound or that of a vibrating body repeats itself, expressed in Hertz (Hz).

**Octave band** - The frequency range of one octave of sound frequencies. The upper limit is always twice the frequency of the lower limit. Octave bands are identified by the geometric mean frequency or center between the lower limit and the upper limit.

## CHRISTOPHER PAPADIMOS *PRINCIPAL*

CHRISTOPHER PAPADIMOS is a noise and vibration consultant with over 23 years of experience in measuring, assessing and developing mitigating strategies for projects with noise and vibration requirements. Since 1989, he has worked continuously on numerous projects for various types of facilities involving environmental acoustics, noise and vibration control for mechanical systems, structural noise and vibration, and architectural acoustics. Projects include residential and commercial buildings, institutional and government buildings, worship and performing spaces, and transportation and industrial facilities.

Mr. Papadimos has consulted on a large number of environmental studies regarding noise and vibration impacts and mitigation associated with large-scale new construction transportation and industrial projects. Transportation noise and vibration studies include freeways and rail systems, numerous road widening and improvement projects, and aircraft noise assessments. Other environmental noise studies include power plants, refinery expansion projects, quarries, other industrial facilities, commercial, institutional, housing and miscellaneous development projects. He has also participated on noise and vibration research projects for the California Department of Transportation (Caltrans) and has been an expert witness and provided public testimony for a number of projects.

Mr. Papadimos favors a practical, hands-on approach of integrating vibration and acoustical requirements into the design from the onset of each project. He is experienced in developing project requirements, establishing design criteria, conducting site and building characterizations, developing and implementing noise and vibration control options for various project types and construction activities.

### PROFESSIONAL EMPLOYMENT

- Papadimos Group – Founding Principal (January 2005 to present)
- Cerami & Associates – Associate Principal (April 2004 to December 2004)
- Shen Milsom & Wilke – Associate (May 2001 to March 2003)
- Illingworth & Rodkin – Senior Consultant (January 1999 to May 2001)
- Frank Hubach Associates – Consultant (May 1995 to December 1998)
- Illingworth & Rodkin – Consultant (July 1989 to May 1995)

### EDUCATIONAL BACKGROUND

- University of California at Los Angeles , B. Sc. Mechanical Engineering, (1989) Magna Cum Laude, Departmental Scholar, Dean's and Honor Lists
- Airport Noise Planning using INM Computer Modeling, Engineering Program, University of Texas at Austin, 1993

### PROFESSIONAL SOCIETIES

- ASHRAE – National Programs Chair and Technical Committee Member
- Institute of Environmental Sciences and Technology – Senior Member
- Institute of Noise Control Engineering – Member

**PROJECT EXPERIENCE (Partial List)**

- Alta Devices Facility, Sunnyvale, CA – Environmental assessment for facility noise to comply with city requirements.
- Amgen, South San Francisco – Acoustic studies for new facilities to comply with city requirements including on nearby trails and open space.
- BART Subway Extension to SFO, Colma, CA - Noise and vibration consultant and expert witness to the Coalition of Colma Cemeteries.
- Bay Bridge Pile Demonstration Project, San Francisco, California – Participated on environmental studies for the California Department of Transportation for the eastern span replacement project for the Bay Bridge
- Black Dog Amphitheater, Burnsville, MN – Acoustic studies for new amphitheater to the surrounding communities
- Cal Memorial Stadium Renovation, UC Berkeley – Expert witness for assessing community noise to surrounding residential areas and offer mitigation.
- Caltrans soundwall studies – Participated on numerous noise studies including effectiveness of sound barriers under various weather conditions.
- City College Mission Campus, San Francisco, CA – Environmental noise review of new facilities to the neighborhood to resolve community concerns.
- Community Pool, Calistoga, CA – Expert witness for neighborhood group to address community noise for this proposed facility to the surrounding area.
- College of Marin Math and Sciences Facility – Environmental acoustic studies and design to control facility noise to surrounding residential areas.
- Ellington Residences, Oakland, CA – Acoustic studies for new high rise residential building near Jack London Square to meet city requirements.
- Emerystation, Emeryville, CA – Environmental studies for mixed use campus to comply with local requirements to surrounding residential areas.
- Genentech, South San Francisco, CA – Environmental noise studies for new boiler plant for compliance with local general plan and code limits.
- Livermore Municipal Airport – Livermore, CA – Acoustic studies to mitigate aircraft noise to nearby recently completed residential developments
- Macae Energy Center – Environmental noise studies for power generation complex in the rain forest to comply with World Bank regulations - Macae, Brazil
- McCarran International Airport - Las Vegas, NV - Sound insulation studies for new private mixed-use developments near the airport to meet county standards.
- Mills Peninsula Health Center, San Bruno, CA – Acoustic studies for chiller plant and diesel generator replacement to meet city requirements.

- Oakland International Airport - Participated in sound insulation review studies for existing residential developments in the vicinity of the airport.
- Palo Alto Waste Treatment Plant – Environmental studies for plant noise emissions for conformance with local requirements.
- Penn State University Millennium Science Complex – Acoustical studies for new facility to comply with local codes for surrounding residential uses.
- Portola Valley New Town Hall – Acoustic studies for new town center for noise and land use compatibility and code compliance.
- San Francisco International Airport – Provided review of aircraft noise exposure to the City of Foster City as required for the update of the General Plan.
- New Stanford Hospital, Palo Alto, CA – Acoustic studies and develop design for new major healthcare facility to comply with city and county requirements.
- Transit Village, Walnut Creek, CA – Environmental studies for new mixed use development next to BART station to address transportation noise and vibration.
- Trousdale Pump Station, San Bruno, CA – Environmental studies for new pump station including diesel generator for local code compliance
- UCSF Parnassus and Mission Bay Campuses, San Francisco, CA – Acoustic and vibration consulting for multiple new and existing facilities
- UC San Diego Jacobs Medical Center – Acoustical studies for healthcare facility expansion and new central plant to comply with wildlife refuge requirements.
- UC Santa Cruz Biomedical Sciences Building – Acoustical studies for new facility to limit noise emissions on campus and surrounding areas.
- UGGPP Energy Center- San Francisco International Airport – Noise studies and attendance to energy commission hearings for new 1200 MW power plant.
- University of Chicago New Hospital Pavilion – Acoustic and vibration consulting and construction review of new hospital facility expansion
- Valle Del Sol Master Planning – Feasibility studies for proposed large-scale mixed use development in the vicinity of the Albuquerque International Airport
- Vineyard 29, St Helena, CA – Acoustic assessment for new winery and noise emissions to surrounding areas to comply with code limits
- Wallingford Energy Center - Wallingford, Connecticut - 250 MW Simple Cycle Power Facility - comprehensive acoustical services.
- Warren Hall Seismic Retrofit, California State University at Hayward – Conducted noise and vibration feasibility studies for the seismic retrofit of this building.
- 201 Folsom, San Francisco, CA – Acoustic studies for new mixed use high-rise to comply with city planning and building requirements.